through the same region before, it is pretty certain that she had never travelled just the same road. Coming back I gave her her head, and she made every turn so as to keep the same road as on the going trip, with one exception. In that case she made a short-cut by a diagonal road across a quarter-section, striking the regular road a mile further on, and saving about a quarter of a mile. In going up I should have taken the same route, had I not had some business which required me to go the longer way. At the point where this road turned off, it led toward a hill which concealed its junction with the regular road. I certainly did nothing to guide the mare, and was astonished to see her take the short-cut.

As Dr. Work has left considerable room for "accident," he may be able to dispose of this circumstance in that way, though I can scarcely accept such an explanation. J. M. ALDRICH.

Brookings, S.D.

THAT the sense of direction is feeble, if indeed present, in civilized man cannot be denied. I have had some experiences which lead me to suspect that it may be obsolescent rather than quite obsolete. It has frequently occurred that in coming into a strange town or city at night, when compelled to abandon all conscious effort to keep my direction, I have found that in some way I had not lost the points of the compass. These may have been happy accidents, but they may have been cases of unconscious orientation.

Again, upon visiting a cave of considerable dimensions, I purposely refrained from any conscious effort in keeping the points of the compass, with the same result as in the preceding cases.

To the foregoing I have added some inquiries, and a few observations upon others, and feel that there is some ground for thinking that there may be a feeble sense of direction still left to us, though so feeble as to be easily overborne by suggestion from the other senses. CHARLES E. BESSEY.

University of Nebraska, Lincoln.

On Biological Nomenclature.

I AM glad to learn, from Dr. Coues's letter in *Science*, that the code of rules promulgated by the American Ornithological Union a few years ago has been rigidly enforced in that branch of biology, and has been found to work admirably in practice. I studied these rules at their appearance with much interest and attention, and have since, so far as possible, endeavored to adhere to them in my own writings, with one exception — that concerning the erection and definition of genera. As I see that the botanists are disposed to accept this same rule, I shall be glad if a wider discussion may be called out before it becomes established. I refer to canon xlii., which recognizes the validity of generic names unaccompanied by definition, if described species are pointed out as types.

Among ornithologists, and perhaps among botanists, such a rule may not be productive of as much confusion and annoyance as is sure to be the case among entomologists. Generic characters are not, and should not be, included in specific descriptions; how then is it possible for the remote student to learn what *nomina nuda* mean, when it is impossible for him to study the types? He who studies only his own immediate fauna or flora, without a knowledge of the allied forms throughout the world, can never be very successful as a systematist, and, if we are to rely upon types, what is the good of a scientific nomenclature? Furthermore, in such a science as entomology, where there is still a tendency to look upon the manufacture of species and genera as the *ultimum bonum* of the systematist, the mere possibility of such a rule obtaining currency must have a tendency to foster superficiality, incompetence, and ignorance. While I do not agree wholly with those who look upon the genus as an abstract thing, over and above types, I do protest strongly against the acceptance of a rule that will relieve the namer from the necessity of knowing anything about the things he names.

The fear of evil results is not a groundless one. Some years ago an Italian writer, with an assurance as boundless as his ignorance, brought forth a new "system" of dipterological classification, with hundreds of new names. Not the slightest attention has ever been paid to his "system;" but, with this rule in force, one would be bound to torture himself in trying to unravel its vagaries. The careless writer should have no such rule, the careful writer needs none. S. W. WILLISTON.

University of Kansas, Oct. 18.

Solid Glycerine.

CAN you inform me, through your magazine, by what chemical, or by what process, glycerine may be solidified, retaining its transparency? Can any reader answer? C. C. SMITH.

New York, Oct. 31.

BOOK-REVIEWS.

Fourteenth Annual Report of the State Board of Health of the State of Connecticut for the Year Ending November 30, 1891. New Haven, 1892.

THIS report presents fresh evidence that the work undertaken by the various State boards of health is steadily increasing both in scope and in value. This encouraging condition of things has been brought about largely by the adherence of several States to the policy of employing competent expert service. The authorities of these States consider that scientific problems can be successfully attacked only by the most advanced scientific methods, and have in consequence availed themselves of the aid of highly trained chemists, biologists and engineers. A great impetus has been given in this way to the best kind of sanitary work.

The Connecticut report contains, besides the usual reports from local boards of health and the annual statistics of births and deaths, several special features of more than ordinary importance and interest. Dr. H. E. Smith presents a special report upon "The Origin of Certain Cases of Typhoid Fever from Money Island." Twenty-one cases of typhoid, one of which proved fatal, were traced to the contaminated water used at a hotel on Money Island. From . . . facts concerning the sources of the water used, it appears that during the period August 11 to 14, at which time all of those subsequently taken ill were at the inn together, the drinking-water was obtained from the billiard-hall cistern." Dr. Smith shows further that abundant opportunity existed for the infection of this particular cistern water, and adduces convincing evidence that the water was actually infected by a case of "walking typhoid," and that the water thus infected spread the disease.

Dr. L. S. DeForest, in his article upon "Tuberculosis as a Local and Contagious Disease in New Haven" discusses the interesting question of infected dwellings. Dr. DeForest found from the data of 1876–1890 three principal districts of concentration of tuberculosis in New Haven. From a detailed study of house cases he arrived at the conclusion that houses sometimes became true foci of infection. "We think that the accompanying maps and tables go far to show that consumption is endemic in certain parts of the city; that in these parts there are many houses in which it is distinctly dangerous to live." The value of Dr. DeForest's interesting paper would be considerably enhanced by the addition of exact references to the writings of Flick, Cornet, and the other workers in this same field.

The report of the "Examination of Certain Connecticut Water Supplies," by Drs. Samuel W. Williston, Herbert E. Smith, and Thomas G. Lee, covers some two hundred pages and is illustrated with a number of well-arranged charts showing the monthly variations of the analyses. In some respects the report merely confirms the previous work of the Massachusetts State Board of Health, but in other respects it improves upon and extends the latter. Fifteen different water supplies were selected for study, and monthly examinations were made of most of these during a period of twenty-three months.

The special report on the chemical examinations is by Dr. Smith, who in his methods follows closely the chemists of the Massachusetts staff. He, however, expresses his results in milligrams per litre rather than in parts per hundred thousand, and makes a few other minor clerical changes. The limited resources at his command did not permit him to take up carefully the interesting and important question of "normal chlorine;" but his chlorine determinations, so far as they go, support the work of